

CLAIMS

1. A fuel delivery system for an internal combustion engine, having a fuel feed pump (10), which delivers fuel which is at pilot pressure to a high-pressure fuel pump (11) that communicates on the high-pressure side with at least one injection valve (14), in order to deliver fuel at high pressure to the injection valve or valves (14), characterized in that a coolant medium flow can be delivered to the high- pressure fuel pump (11) via at least one coolant conduit (21, 31), in order to keep the temperature (T_{HDP}) of the high- pressure fuel pump (11) below a critical operating temperature (T_k).
2. The fuel delivery system of claim 1, characterized in that for cooling, air can be delivered as coolant medium to the high-pressure fuel pump (11) through the coolant conduit (21).
3. The fuel delivery system of claim 2, characterized in that a fan (23) is associated with the at least one coolant conduit, for generating the cooling air flow through the coolant conduit (21).
4. The fuel delivery system of claim 3, characterized in that the fan (23) is controllable as a function of the temperature of the high-pressure fuel pump (11) and the critical operating temperature (T_k).

5. The fuel delivery system of claim 1, characterized in that for cooling, a coolant liquid can be delivered as coolant medium to the high-pressure fuel pump (11) through the coolant conduit (31).
6. The fuel delivery system of claim 5, characterized in that as coolant medium, coolant water is diverted from the cooling system of the engine.
7. The fuel delivery system of claim 5 or 6, characterized in that for controlling the delivery of coolant medium, a blocking valve (32) is provided, which is actuatable by a control circuit (18) as a function of the temperature (T_{KS}) of the coolant medium and the temperature (T_{HDP}) of the high-pressure fuel pump (11).
8. The fuel delivery system of one of the foregoing claims, characterized in that a pressure regulator device (19) is assigned to the high-pressure fuel pump (10), in order to enable adjusting the fuel pressure delivered to the high-pressure fuel pump (11) on the low-pressure side.
9. The fuel delivery system of claim 8, characterized in that the pressure regulator includes a pressure regulator (19), which is connected on the output side to the fuel feed pump (10) and is controllable by a control circuit.
10. The fuel delivery system of claim 9, characterized in that the pressure regulator (19) is controllable such that the pressure delivered to the low-pressure side of the high- pressure fuel pump (11) can be limited to a first or a second value.

11. The fuel delivery system of claim 9, characterized in that the pressure regulator (19) is controllable such that the pressure delivered to the low-pressure side of the high- pressure fuel pump (11) can be regulated variably.

12. The fuel delivery system of claims 9-11, characterized in that the pressure regulator (19) has a first and a second pressure limiting valve (25, 27), which are connected in parallel and enable a pressure limitation to a first and a second pressure, respectively.

13. The fuel delivery system of claim 12, characterized in that a blocking valve (26), actuatable by the control circuit (18), is connected in series with the pressure limiting valve (25) for the low pressure.

14. The fuel delivery system of claim 13, characterized in that a controllable throttle device is connected in series with the pressure limiting valve (25) for the low pressure.

15. The fuel delivery system of claim 14, characterized in that the throttle device has a throttle valve, which is embodied such that the flow resistance increases disproportionately as the quantity of fuel flowing through increases.

16. The fuel delivery system of one of the foregoing claims, characterized in that at least two coolant conduits (21, 31) are provided, of which one coolant conduit (21) delivers air and the other coolant conduit (31) delivers water as coolant medium to the high-pressure fuel pump (11).